



*Less resistant shale bedrock and clay soils form the rounded topography in the northern part of the King Range.*

### 3.2.2 Minerals and Energy Resources

Despite nearby Petrolia's name, the KRNCA contains few energy or mineral resources. The first commercial oil in California was produced from a well drilled near Petrolia in 1865, and there was sporadic exploration along the Mattole River between Honeydew and Cape Mendocino through the 1950s, but no significant production ever took place.

In 1929 the area was withdrawn from disposition by Executive Order 5237, which included a withdrawal of the public lands from non-metallic mining claims. An unpublished BLM Minerals Inventory was conducted in the King Range in 1962, and the resulting report described the area's geology as having little or no potential for most metallic minerals, and the extreme inaccessibility made most possible mining ventures impractical (Collins 1962a). At that time, 31 mining claims existed in the King Range, grouped around Queen's Peak, Saddle Mountain, and Big Flat, but only one had yielded any actual production. Known as the Bear Creek mine, it was an open pit operation that produced manganese in 1958 and '59, sold to a federal buying program. When the program shut down in 1959, the mine closed as well. A second unpublished minerals report from 1962 investigated an alleged quartz mining claim being excavated at the north end of Big Flat, but found it to be a search for buried treasure, and suggested that the attempt to take possession of the parcel as a quartz mine was invalid (Collins 1962b).

Section 6(a) of the 1970 King Range Act made all U.S. mining laws applicable on KRNCA lands, "except that all prospecting commenced or conducted, and all mining claims located after the effective date of this Act shall be subject to such reasonable regulations as the Secretary may prescribe to effectuate the purposes of this Act. Any patent issued on any mining claim located after the effective date of this act shall recite this limitation and continue to be subject to such regulations. All such regulations shall provide, among other things, for such measures as may be reasonable to protect the scenic and esthetic values of the Area against undue impairment and to assure against pollution of the streams and waters within the Area." Section 6(b) added: "Nothing in this section shall be construed to limit or restrict rights of the owner or owners of any existing valid mining claim." These restrictions were intended to

provide protection against unnecessary damage from prospecting or mining activities without eliminating this use outright (U.S. Congress 1970). No mining claims currently exist in the KRNCA.

Based on the low mineral potential, in-place protective policies, and lack of valid mining claims in the KRNCA, mineral issues are considered to be insignificant with minimal potential impact and will not be discussed or assessed any further in this RMP/EIS.

### 3.2.3 Paleontological Resources

Paleontological resources are the physical remains or other physical evidence of plants and animals preserved in soils and sedimentary rock formations. They are important for correlating and dating rock strata, and for understanding past environments, environmental change, and the evolution of life. There are no known paleontological resources of any significance or threatened by any public use or management activity in the KRNCA. The resource is not being affected by the plan and therefore will not be discussed or analyzed in this RMP/EIS.

### 3.2.4 Climate

The climate in Northwest California can be broadly described as Mediterranean; winters are wet and cool, and summers have virtually no precipitation. Nearly all rainfall occurs between October and May. Summer temperatures are warm in inland locations, and can exceed 100°F on the hottest days. Average air temperatures range from a high of 95°F to a low of 30°F. The coastline is moderated by the cold Pacific Ocean waters, with summer high temperatures in the mid-60s with many days of fog. Due to its extreme topographic relief, the KRNCA exhibits both coastal and inland weather characteristics in a relatively small geographic area. The rugged topography also causes some local weather anomalies in wind, rainfall, and temperature.

The 4,000 foot vertical rise of the King Range results in a high degree of orographic (terrain induced) lifting of storms approaching the coast, causing intense rainfall. Rainfall exceeds 100 inches annually and occasionally tops 200 inches on the ridges. In contrast, the immediate coast receives about half as much rain, with about 65 inches falling at Shelter Cove (see Table 3-1). The total amounts of precipitation combined with the often intense and prolonged rainfall events bring flood or near-flood events to the watersheds regularly. Twenty-four hour rainfall totals exceed 16 inches in the most intense storms.

**Table 3-1: Comparison of Coastal (Shelter Cove) and Mountain (Wilder Ridge) Rainfall Totals**

AREA	AVERAGE MONTHLY PRECIPITATION												
	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APR.	MAY	JUNE	ANN.
Shelter Cove	0.23	0.77	1.60	4.32	8.21	11.77	10.76	9.82	8.96	4.50	3.20	1.22	<b>65.40</b>
Wilder Ridge <sup>1</sup>	0.11	0.60	1.20	6.06	16.84	23.46	22.81	19.81	17.49	7.02	3.93	1.39	<b>120.71</b>

<sup>1</sup> Trower rain gauge, Wilder Ridge Road 4 miles south of Honeydew, average for years 1980-2002.

Source: National Weather Service, Western Regional Climate Center Web Site, 2003.

Snow falls periodically at the higher elevations, but rarely at sea level. Although significant snow accumulations may occur on the King Range Crest, it usually melts within a few days, except in shaded

areas at the highest elevations. Here, snow may persist for several weeks or more and restrict road and trail access.

A coastal climatic anomaly associated with the King Range is the low incidence of summer fog. Although the coastal beaches receive some fog, it is much less prevalent than the rest of northwest California. Coastal summer temperatures are in the 60s (Fahrenheit) on days when marine air influences the area, but often climb into the 80s with strong offshore winds. The cool marine air layer is rarely deep enough to reach the King Range Crest, resulting in summer temperature inversions where the higher ridges are 20-30 degrees warmer than the coast, and often exceed 90°F. Table 3-2 compares average coast and inland temperatures throughout the year.

**Table 3-2: Comparison of Coastal and Inland Temperatures**

SHELTER COVE TEMPERATURES—COASTAL (°F)													
	JAN	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT	OCT.	NOV.	DEC.	ANN.
Avg. Max.	57.7	57.9	59.2	61.3	65.5	68.7	69.9	69.6	70.2	67.1	61.5	57.7	<b>63.9</b>
Avg. Min.	45.4	45.5	45.4	46.0	48.5	51.4	52.7	53.0	52.9	51.6	48.1	45.9	<b>48.9</b>
RICHARDSON GROVE STATE PARK—INLAND (°F)													
Avg. Max.	50.0	55.0	59.4	64.8	71.6	79.2	86.7	87.3	82.9	70.5	55.8	49.5	<b>67.6</b>
Avg. Min.	36.5	38.1	39.2	40.8	45.1	50.0	52.7	52.9	49.3	44.8	40.6	37.0	<b>43.9</b>

Source: National Weather Service Data, Western Regional Climate Center Web Site, 2003

The steepness of the King Range, combined with the topography of the river basins in the area, also produces an unusual local weather phenomenon of offshore winds emanating from a northeast to easterly orientation. This condition is an exception to the prevailing winds along the entire California coastline where the direction is usually onshore from west to southwest. “Flagging,” or the wind-caused pattern of leeward-only limb growth and development of ridgetop Douglas-fir, points westward toward the ocean, indicating this typically easterly flow.

### 3.2.5 Air and Air Quality

Air quality for the planning area is generally managed and monitored by the North Coast Unified Air Quality Management District (NCUAQMD); a portion of the study area also falls within the Mendocino County Air Quality Management District. The BLM does not have any ongoing operations in the King Range that fall under air quality permits issued by the state or federal government. The two primary unregulated sources of air pollution that can originate on public lands in the King Range are smoke from fires and dust generated from road use, maintenance, and rehabilitation.

In the event of a uncontrolled wildfire in the KRNCA, the NCUAQMD Regulation 2 (revised 1987 and adopted by the Basin Control Council of the California North Coast Air Basin and Mendocino County Air Pollution Control Board, 1988), contains provisions for the setting of backfires necessary to save life or valuable property (California Public Resources Code, Section 4426). The regulation also allows prescribed burning activities for the abatement of fire hazards (California Health and Safety Code,

Section 13055) and for forest management, range improvement, disease or pest prevention, or the improvement of land for wildlife and game habitat (California Health and Safety Code Section, 39011[a]).

The BLM can burn only when sanctioned by the California Air Resources Board or the NCUAQMD (California Health and Safety Code, Section 41855). The BLM must comply with the guidelines set forth in the North Coast Unified Air Quality Management District Particulate Matter (PM<sub>10</sub>) Attainment Plan (1995) in order to achieve the California Ambient Air Quality Standards for PM<sub>10</sub>. Smoke management concerns must be addressed in all prescribed fire plans. For all prescribed burns over ten acres in size, a Smoke Management Plan must be submitted to the NCUAQMD for approval prior to ignitions. Smoke emissions from prescribed burning activities may have minimal intermittent effects on the visual resources of the KRNCA and surrounding communities, but are not expected to significantly impact the Humboldt Bay Air Basin or the Ukiah—Little Lake Air Basin. The BLM works with the Mendocino County Air Quality Management District to follow strict air quality guidelines for any proposed burning near Whale Gulch School.

Dusty roads are not considered to have a significant affect on air quality due to the absence of ultramafic or serpentine bearing rock formations within the KRNCA (L. Green, pers. comm. 2003).

Currently, road maintenance activities are performed during moderately wet periods during the fall and spring to ensure adequate soil moisture content. This seasonal operation reduces dust generation during grading and enhances road surface compaction, which results in road surfaces that are less prone to dust generation from routine traffic and less likely to erode under precipitation. Occasionally, application of dust suppressants like lignosulfate, magnesium chloride, and calcium chloride is required to mitigate dust generation from certain roads in the front-country when climatic conditions are very dry. Dust suppression is not performed immediately adjacent to sensitive surface water bodies. King Range operations are either not subject to or are currently fully compliant with all air pollution control requirements. There are no planned operational changes that will result in generation of regulated air pollutants; therefore, no specific alternatives have been identified to address air quality.

### **3.2.6 Visual Resources**

The KRNCA encompasses one of the most dramatic coastal landscapes in the contiguous 48 states, and conservation of the area's scenic attributes was an important factor in its designation as a National Conservation Area. The scenic qualities of most landscape settings in the KRNCA are mostly defined by dramatic natural features. The characteristic landscape in the southern two-thirds of the area consists of steep walled, heavily forested mountains rising abruptly from black sand beaches. On the lower slopes, solid forests are only broken by occasional landslides carving long open swathes down to the waterline. Upper slopes are a mosaic of dark green conifers and pale snags interspersed with patches of grey-green chaparral. North of Kinsey Ridge, the vegetation changes to a mixture of forest and golden coastal prairies.

In the northern part of the King Range, cultural resources also contribute to scenic values. Wooden structures from historic and present-day ranching operations are integral parts of a highly scenic pastoral landscape. The historic Chambers Cabin, with associated barn and corrals set against a majestic backdrop of coastal prairies, regularly appears in scenic calendars and books. The Punta Gorda Lighthouse,

perched on a rocky outcrop above an isolated stretch of beach, is another example of a popular scenic attraction.



*The southern part of the King Range is characterized by heavily forested mountains plunging into the Pacific.*



*Historic ranching structures contribute to the pastoral scenic qualities in the northern part of the King Range.*

When developments complement and borrow form, line, color and texture from existing landscape features, they minimize impacts to the characteristic landscape to retain the visual integrity of the area. The BLM uses the Visual Resource Management (VRM) system as a framework to assess scenic values on public lands and manage visual impacts from activities and projects. Public lands are inventoried based on three factors:

- Relative levels of scenic quality: In the King Range, the coastal slope contains outstanding scenery and is known nationally for its dramatic meeting of mountains and sea. The inland ridges, although still very scenic, are more typical of other landscapes in northwestern California.

- Level of viewer sensitivity to landscape changes: The highest viewer sensitivity occurs at popular public use areas such as scenic overlooks, recreation sites, and trail and road corridors. Areas visible from private residences also receive high sensitivity ratings.
- Distance of an area from points or corridors of high viewer sensitivity: Even minor landscape changes are very evident when viewed in the foreground zone, but these changes become less evident with distance.

Based on these inventory factors, VRM classes are assigned to different areas of public land and used as a basis to consider visual values in the planning process. The VRM classes are then adjusted if necessary to reflect the resource allocation decisions and management actions proposed in various plan alternatives.

Each VRM class allows for projects with differing degrees of contrast with the characteristic natural landscape elements of form, line, color, and texture. As described below, the higher numbered classes allow for projects with greater contrast to the landscape.

#### ***3.2.6.1 VRM Inventory/Management Classes***

**Class 1:** The objective of this class is to preserve the landscape's existing character. This class allows for natural ecological changes and only very limited types of management activities and uses. Any contrasts with the natural landscape must be minimal and not attract attention.

**Class II:** The objective of this class is to retain the landscape's existing character. The level of change to the characteristic landscape should be low. Management activities and uses can be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture in the predominant natural features of the characteristic landscape.

**Class III:** The objective of this class is to partially retain the landscape's existing character. The level of change to the characteristic landscape can be moderate. Management activities and uses may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements of the predominant natural features of the landscape.

**Class IV:** The objective of this class is to allow for management activities and uses requiring major modifications to the natural landscape. The level of change to the characteristic landscape can be high. Management activities and uses may dominate the view and be a major focus of viewer attention. However, every attempt should be made to mitigate the impacts of activities through careful location and repeating the visual elements of the landscape.

When projects or actions are proposed in the planning area, a visual contrast rating is conducted to ensure that they are designed and located to meet the VRM Management Class objectives. For example, a project to restore coastal prairie in the northern part of the KRNCA should borrow from the existing size, shape, and texture of nearby natural openings.